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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/597,348

**Applicant(s)**

ROSSI ET AL.

**Examiner**

AVINASH SAVANI

**Art Unit**

3749

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4,6-11,13,14,17-22,24-52,54-57 and 60-93 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-11,13,14,17-22,24-52,54-57 and 60-93 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-848)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Status of Claims***

1. The following action is in response to the applicant's Amendment dated 3/3/2009, that was in response to the Office action dated 10/3/2008. Claims 1, 3, 4, 6-11, 13, 14, 17-22, 24-52, 54, 57 and 60-93 are pending, claims 1, 4, 7, 10, 11, 13, 14, 19-21, 24, 26, 28-36, 42, 43, 46-52, 54, 55 and 69 have been amended, while claims 2, 5, 12, 15, 16, 23, 53, 58 and 59 have been cancelled and are withdrawn from consideration, and claims 73-93 are presented as new.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-36, 46-53 and 70-72 have been considered but are moot in view of the new ground(s) of rejection.
3. Applicant's arguments filed 3/3/2009 regarding claims 37-45 and 54-68, have been fully considered but they are not persuasive. The reasons for the applicant's remarks not being persuasive are given below.
4. Regarding claims 37-41, the applicant respectfully submits that Halsey fails to disclose a manifold for a gas burner as further claimed, and that Halsey discloses a plasma diffuser. The upper wall of the applicant is disclosed to be a concave surface, and from the figures appears to support the distributor, therefore the upper wall and lower wall of Halsey are arranged in a similar manner in that they are connected via a periphery, and the diffuser is at least a similar structure in that it distributes gas.
5. Regarding claims 42-45, the applicant respectfully submits that Huang fails to disclose "discrete distribution chambers" and venture systems as claimed in claim 42.

The discrete distribution chambers are understood to be separate members assembled together to form the distributor according to the applicant's specification. Therefore, the chambers (30) are seen to be individual pieces mounted together on a platform of some sort to form the distributor, and a venturi system as claimed is seen in Huang in that it provides an air gas mixture to the distributor.

6. Regarding claims 54-59, the applicant respectfully submits that Schlosser fails to disclose at least two venturis with each venturi having a respective injector associated therewith as further claimed, however the notations provided are consistent with Huang and the previous rejection regarding claims 54-59 in that they were anticipated by Huang. Although Schlosser's name was used, Huang was the intended reference.

Huang is seen to disclose at least two venturis (17) with its own respective injector (15).

7. Regarding claims 60-68, the applicant respectfully discloses that Dane-2 fails to disclose or suggest occluding structures associated therewith for directing and or baffling said air gas mixture. The occluding structures are said to direct or baffle an air gas mixture. Therefore, it is understood that the elements 39, 41 etc. are flame ports, but at least in combination with the flared section (53) air gas mixture is directed from a transition port to flame ports.

8. The applicant's remarks have been fully considered and have been addressed. For the above reason, however, with regard to claims 37-45 and 54-68, the applicant's remarks are not persuasive.

***Claim Objections***

9. Claims 1, 8, 9, 45 and 77 are objected to because of the following informalities: Claim 1, line 12, "flam" is believed to be "flame". Claims 8, 9, and 45 are objected to because improper status identifiers are used, and to avoid a notice of non-compliance, the correct status identifier should be used on any of the next amendments. With regard to claim 77, line 3 and 5, "venture" is believed to be "venturi". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1, 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim limitations of "at least one distribution chamber" and "at least one injector" is inconsistently referred to both "at least one distributor chamber" and "distributor chamber" and "at least one injector" and "injector" respectively which can imply multiple or single chambers/injectors depending on which limitation is considered. Therefore it is indefinite to whether there are multiple or singular chambers/injectors, and will be interpreted to mean "at least one" for both.

12. Claim 14 is indefinite because it appears from the figures that only three channels make of the cross-shaped T portion of the distribution means and will be interpreted as such.

***Claim Rejections - 35 USC § 102***

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 37-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Halsey et al [6663025].

15. With respect to claims 37-41, Halsey discloses a manifold for a gas burner [see FIG 2]. The manifold is in the arrangement as claimed, specifically there is seen a lower (411) wall and an upper wall (406) separated by an outer peripheral wall, wherein there is a convex shape [col 6, line 4-7] to provide a cup means so that if spilling occurs, the spillage will drip to the center. There is also a means to mount at least one injector (302). The outer surface of the upper wall is also seen to be concave, which allows for a larger distribution region. The injector (302) is considered to be housed in a port (410). The burner is connected to a gas supply, wherein the connection is by means of the port, which is understood to pressurize the cavity. The walls are seen to be made of a thin construction.

16. Claims 54-59 are rejected under 35 U.S.C. 102(b) as being anticipated by Huang [5842849].

17. With respect to claims 54-57, Huang discloses: A gas burner [see FIG 4] including a distributor (30) having flame ports (32) in a wall portion of said distributor and or in a cap which will cooperate with said distributor [see FIG 4], said distributor

also including at least two venturis (17) with each venturi having a respective injector (15) associated therewith located internally of and near to a wall portion of said distributor [see FIG 2], said distributor including at least two generally elongated air inlet ports (172) which are located in said wall, said ports having a longitudinal axis which extends circumferentially around said distributor, said ports including at their extremities a reduced cross sectional area when compared to the central portions of said port [see FIG 4]. As can be seen from the figures, with respect to claim 55, radially inwardly flowing air from would not interact with the injector, since the injector is located between opposing ends of the inlet ports. It is understood that a secondary stream of air passes through the air inlet port due to the arrangement similarly claimed in 56. The air is provided at a generally circumferential direction, as it is seen that the ports direct the flow in the direction, and the air inlet ports are seen to demonstrate an eye shaped configuration. The air inlet ports also provide an opening which increases in height then decreases [see FIG 6].

18. Claims 60-68 are rejected under 35 U.S.C. 102(b) as being anticipated by Dane [FR2770620].

19. With respect to claims 60-68, Dane discloses: A gas burner (1) including a distributor means (43) having at least one chamber (51) to distribute an air gas mixture around said distributor means, said burner including a plurality of flame ports (41) through which said gas mixture can pass and be ignited; at least one injector ( ) associated with said distributor means, said at least one injector being positioned to inject gas into said at least one chamber via a respective vertically directed converging

passage terminating with an transition port which has communication with said chamber [see FIG 2], a venture (33) being formed in part by said converging passage and said transition port with a final part of said venturi being formed by at least one venturi extension which acts upon a generally horizontal flow (29) of said air gas mixture flowing from said transition port, said transition port having at or near its rim two or more occluding structures (39) associated therewith for directing and or baffling said air gas mixture in its flow from said transition port to said flame ports [ see FIGs 1-3, page 5, line 29, page 6, line 7]. Referring to claims 61-68 and the figures of Dane, it is seen that Dane discloses the occluding structure (39) which comprise a wall formation [see FIG 2], wherein they have a castellated appearance, they are formed in the cap, and the flame ports are distributed in the cap, the venturis extend away from the transition port, and the venturis are located near the occluding structure (39), the venturis are formed on the distributor means, and they taper toward the extremities.

20. Claim 77 is rejected under 35 U.S.C. 102(b) as being anticipated by Bechtold [2506483].

21. With respect to claim 77, Bechtold discloses: A gas burner comprising one distributor means having at least two discrete distribution chambers therein, each chamber having communication with flame ports and including a venture to supply an air gas mixture thereto; the distribution chambers forming a periphery around an inner aperture; said burner having only one manifold to conduct gas to respective injectors for each venturi from a single gas supply connection to said manifold, each of said chambers having a transversely extending portion, which extends inwardly towards the



centre of said burner, whereby between the ends of respective transversely extending portions the inner aperture forms an unobstructed space [see FIG 4]. The distribution chamber is seen to be formed by the clover leaf shape of the burner fingers, and is surrounded by flame ports. There is at least one injector for the chamber having one supply means per burner, wherein the inner aperture is unobstructed, and the inwardly transverse finger which helps to form the venturi is also seen.

22. With respect to claim 78, Bechtold discloses: A gas burner as claimed in claim 77, wherein each transversely extending portion includes at least two sides which are generally parallel [see FIG 4]. From the figures, it is clearly seen that the fingers form the transverse portion and has two side portions as further claimed.

23. With respect to claim 79, Bechtold discloses: A gas burner as claimed in claim 77, wherein each chamber also includes two oppositely extending circumferential or arcuate portions [see FIG 4]. The flame ports are seen to form around a circumferential portion.

24. With respect to claim 80, Bechtold discloses: A gas burner as claimed in claim 77, wherein said chamber also includes a radially outwardly extending portion [see FIG 4].

### ***Claim Rejections - 35 USC § 103***

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. Claims 1, 3, 4, 6-11, 13, 14, 22, 24-31, 35, 36, 42-45, 69-75, 84 and 89-93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bechtold [2506483], further in view of Huang [5842849].

27. With respect to claim 1, Bechtold discloses a gas burner including: a distributor means having at least one distribution chamber (area defined around 18) to distribute an air gas mixture around said distributor, said burner including a plurality of flame ports (36) through which said gas mixture can pass and be ignited [col 3, line 49-54]; at least one injector (26) associated with said distributor chambers; and at least three air gas mixture distribution channels (39) to enable gas flow in at least three directions away from said transition port and towards associated flame ports [see FIG 4], wherein the burner has an internal aperture (center of burner), at least some of the flame ports being oriented towards the internal aperture [see FIG 4], each distribution chamber including at least one transversely projecting distribution channel which projects into the aperture, the transversely projecting channel including flame ports adapted to direct combustion gasses into the aperture. The at least one injector (26) is associated with at least one finger (18) wherein gas is enable to flow in three directions, two being in opposite directions of the periphery and the third being along the length of the finger. The aperture is seen to be the unobstructed center of the burner, wherein the ports (22) project into the aperture. Bechtold, however does not disclose each of the injectors. Huang teaches a similar device wherein each of the injectors being positioned to inject gas into its associated distribution chamber via an associated venturi system including

an upwardly directed passage and a transition port. In view of Huang, each injector has an upwardly directed passage. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have each injectors associated with a distribution chamber because the arrangement was known in the art, yielding the predictable result of a more even distribution of an air-gas mixture to provide a more uniform flame.

28. With respect to claim 3, Bechtold discloses a burner as claimed in claim 1 wherein said distributor means has a generally cylindrical outer surface [see FIG 4].

29. With respect to claim 4, Bechtold discloses a burner as claimed in claim 1 wherein said distributor means has at least two, or preferably three, equi-spaced inwardly extending arms (18) and associated flame ports [see FIG 4].

30. With respect to claim 6, Bechtold discloses a burner as claimed in claim 1 wherein said flame ports (36, 22) direct streams of air gas mixture towards the centre of said distributor means [see FIG 4] from the figure, it is seen that the ports are directed toward the center of the burner.

31. With respect to claim 7, Bechtold discloses a burner as claimed in claim 1 wherein the aperture has a clover leaf configuration [see FIG 4].

32. With respect to claim 8, Bechtold discloses a burner as claimed in claim 1 wherein said distributor means is segmented, whereby each segment has its own distribution chamber, however does not disclose each segment having its own injector.

33. With respect to claim 9, Bechtold discloses a burner as claimed in claim 8 wherein said distributor means is segmented, however does not disclose by means of segment walls between respective segments.

34. With respect to claim 10, Bechtold discloses a burner as claimed in claim 8, wherein said distributor means is segmented, however does not disclose by means of gas flow from said injectors.

35. With regards to claims 8-10, it is clearly seen from figure 4 that the distribution chamber is segment at least with respect to the fingers/extensions (18). Huang teaches a similar burner wherein each segment (30) has its own injector (15), and segmented means is defined by walls between segments and by means of gas flow from said injectors. In view of Huang, each segment has its own injector. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide segments with its own injector because the arrangement was known in the art, yielding the predictable result of evenly distributing fuel-gas mixture.

36. With respect to claim 11, Bechtold discloses a burner as claimed in claim 8, wherein said segments form one of the following: a cross shape with an arcuate or circumferential cross bar [see FIG 4].

37. With respect to claim 13, Bechtold discloses a burner as claimed in claim 1 wherein there are three venturi extensions which the air gas distribution channels of each distribution chamber form a T [see FIG 4].

38. With respect to claim 14, Bechtold discloses a burner as claimed in claim 8, however does not disclose that each segment includes four air gas distribution channels, but instead discloses three that form a cross shape with an arcuate or circumferential cross bar, and according to the U.S.C 112, 2nd rejection above will be interpreted in such a manner.

39. With respect to claim 22, Bechtold discloses a burner as claimed in claim 1 wherein said distributor means has at least one air entry (22) port per injector (26).
40. With respect to claim 24, Bechtold discloses a burner as claimed in claim 22, wherein each air entry port (22) is formed in a side wall of said distributor [see FIG 4].
41. With respect to claim 25, Bechtold discloses an air entry port for the injector, however does not disclose the differing size of the ports at different regions. Since a supple amount of air is provided, it is believed that providing plurality of air entry ports as claimed is a design consideration, and one of ordinary skill in the art at the time of the invention would have the knowledge and design know-how to provide the differing size of the air entry ports. It is believed to be of design choice since no particular advantage is given.
42. With respect to claim 26, Bechtold discloses a burner as claimed in claim 22, however does not disclose the ports as further claimed.
43. With respect to claim 27, Bechtold discloses a burner as claimed in claim 26, however does not disclose the shielding as further claimed.
44. With regard to claims 26 and 27, Bechtold discloses the burner as claimed, however Huang teaches the burner with an air entry port in the wall of the injector, which is understood to be part of the distributor means, and a wall shields the injector. In view of Huang, the injector is shielded in order to prevent air passing through the air entry port and disturbing the operation of the injector. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide a shielding means because this was known to prevent disturbance in the injector. As can be seen

in figure 2, the injector (7) has an air entry hole (172) wherein the hole is shielded by the distributor top wall (20), thereby demonstrating a means to minimize disturbance to the injector.

45. With respect to claims 28-31, Bechtold discloses a burner with arms, and the air entry region surround the entire periphery of the burner perimeter, thereby showing that there are air entry ports between each arm segment which extends inwardly, wherein it is also seen that the burner has the arms inclining with respect to an imaginary horizontal line toward the centre as can be seen in figure 4, and it is seen that the flame ports (36) is seen to be at an acute angle to the radial direction of the extension of each arm [see FIG 4], and although a trivet is not disclosed, official notice is taken is it is common practice that a burner be accompanied by a trivet so as to support cooking utensils on to be heated. As discussed above, there are not multiple injectors as claimed in claim 28, however, Huang teaches a similar burner with multiple injectors (17). In view of Huang, there are multiple injectors for each segment. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have multiple injectors because the option to do so was known, yielding the predictable result of having a more uniform distribution of fuel.

46. With respect to claim 35, Bechtold discloses a burner as claimed in claim 1 wherein said distributor means has an internal aperture such that the distributor means has an internal and an external perimeter with inwardly directed ports in said internal perimeter and outwardly directed ports in its external perimeter [see FIG 4].

47. With respect to claim 36, Bechtold discloses a burner as claimed in claim 74 wherein each venturi extension is oriented so as to be generally horizontal [see FIG 4].

48. With respect to claim 42, Bechtold discloses a gas burner comprising one distributor (18) means having at least two discrete distribution chambers (area around 18) therein, each chamber having communication with flame ports (36) and including a venturi system to supply an air gas mixture thereto [see FIG 4, converging of sides of fingers]; a gas supply connection connected to a single manifold (26) each of said chambers having a radially transversely extending portion which extends inwardly towards the centre projects into an inner aperture of said burner; whereby between the ends of respective radially inwardly extending portions there is provided an unobstructed space, however Huang discloses said burner having a single manifold to conduct gas to respective injectors (15, 17) for each venturi system from a single gas supply connection to said manifold [see FIG 3]. In view of Huang, there are multiple injectors being fed by a single manifold. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide a plurality of injectors because the technique was known, yielding the predictable result of having a more even distribution of the air gas mixture.

49. With respect to claim 43, Bechtold discloses a gas burner as claimed in claim 42, wherein each transversely extending portion includes at least two sides which are generally parallel [see FIG 4].

50. With respect to claim 44, Bechtold discloses a gas burner as claimed in claim 42 wherein each chamber also includes two oppositely extending circumferential or arcuate portions [see FIG 4].

51. With respect to claim 45, Bechtold discloses gas burner as claimed in claim 42 wherein said chamber also includes an outwardly extending projecting portion [see FIG 4].

52. With respect to claims 69-72, Bechtold discloses a burner in claim 8 wherein the however each of the segments are not discrete, interconnected segments. Huang teaches a similar burner device wherein the distributor is considered to be elements (20) in association with each segment (30) wherein it is seen that the segments (30) are interlocked with element (20) [see FIG 2], wherein element (20) is understood to be the circumferential fixing means that hold the segments (30) together to form an assembly. In view of Huang, the segments are individually connected to form a distributor. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have such an interlocking arrangement, because the technique to assemble the distributor was known to provide a joining means, however it is believed that the joining of the segments via an interlocking connection, or forming the distributor as one piece would provide the same functionality, and is therefore deemed to be of a design matter and not of criticality, since it is given that the distributor can be formed by either means.

53. With respect to claim 73, Bechtold discloses a burner according to claim 1, wherein each distribution chamber includes at least one circumferentially extending



distribution channel [see FIG 4]. It is seen that flame ports are formed in a circumferential manner.

54. With respect to claim 74, Bechtold discloses a burner as claimed in claim 1, including wherein each venturi system includes a transverse expanding section, however does not disclose an upright inward tapering section. Huang teaches a similar device wherein the venturi has an upright ridge as can be seen as the walls in element (30). In view of Huang, these walls would act in a manner to direct the flow of the fuel mixture. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide the structures as claimed because the design was known in the art, yielding the predictable result of further directing air to the flame ports.

55. With respect to claim 75, Bechtold discloses wherein each distribution chamber includes two circumferentially extending channels and a transversely extending channel [see FIG 4].

56. With respect to claim 84, Bechtold discloses a gas burner as claimed in claim 1, wherein said chamber includes at least one venturi extension which defines a peripheral channel to deliver air gas mixture to flame ports [see FIG 4]. The arcuate flame ports form the peripheral channel.

57. With respect to claim 89, Bechtold discloses a burner as in claim 1, wherein each of said chambers includes a transversely extending portion, which extends inwardly towards the centre of said burner, whereby between the ends of respective transversely extending portions there is provided an unobstructed space [see FIG 4].

58. With respect to claim 90, Bechtold discloses a burner as claimed in claim 89, wherein said distributor includes at least two generally elongated air inlet ports which are located in said wall, said ports having a longitudinal dimension which extends circumferentially around said distributor [see FIG 3].

59. With respect to claim 91, Bechtold discloses a burner as claimed in claim 90, however does not disclose the respective injector. Huang teaches a similar device wherein each chamber has a respective injector, therefore it would be inherent that the injector functions as further claimed. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide respective injectors because it was known that there would be a more even distribution of an air gas mixture.

60. With respect to claim 92, Bechtold discloses burner as claimed in claim 90, wherein said injectors and said air inlet ports are arranged with respect to said distributor so that a main stream of radially inwardly flowing air passes through said air inlet port as secondary air for said flame ports [see FIG 3]. The ports are located at a lower portion of the wall, and therefore is understood to provide for a secondary air means.

61. With respect to claim 93, Bechtold discloses a burner as claimed in claim 90, wherein said injectors and said air inlet ports are arranged with respect to said distributor so that air passing through said air inlet ports which will be used as primary air by said injectors approaches said injectors in a generally circumferential direction from said air inlet ports [see FIG 4]. It is seen that flame ports are arranged in a peripheral channel and would therefore provide for the primary air.

62. Claims 17-21, 46-52 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bechtold [‘483], in view of Huang [‘849], further in view of Dane [6655954].

63. With respect to claim 17, Bechtold disclose a burner as claimed in claim 1, however does not disclose the cap.

64. With respect to claim 18, Bechtold discloses a burner as claimed in claim 1, but does not disclose the flame ports as further claimed.

65. With respect to claim 19, Bechtold discloses a burner as claimed in claim 18, but does not disclose the flame ports as further claimed with the cap.

66. With regards to claims 17-19, Bechtold discloses the flame ports, however, Dane teaches a similar burner a further claimed wherein a cap (7) which is positioned on top of said distributor means wherein said burner includes a cap (7) which is positioned on top of said distributor means (9), wherein said flame ports (11) are formed in one or more walls of said distributor means [see FIG 2]. It is clearly seen from the figure that the wall of the distributor means has flame ports, wherein a cap sits on top of the distributor means. According to the figure 4 of the applicant, the flame ports extend into the cap, as can be seen in figure 2 of Dane. The flame port (11) extends into the cap (7), therefore it is understood that the flame ports are formed in the cap. In view of Dane, the flame ports are formed in the cap. It would have been obvious to a person of ordinary skill in the art at the time of the invention to include a cap on top of a burner because the option to do so was known, yielding the predictable result of further directing the air gas mixture toward the center of the burner.

67. With respect to claim 20, Bechtold discloses a burner as claimed in claim 19, however does not disclose the occluding structures.

68. With respect to claim 21, Bechtold discloses a burner as claimed in claim 20, however does not disclose the occluding structures as further claimed.

69. With regards to claims 20 and 21, Dane teaches as similar burner wherein said at least one venturi extension (6) has a occluding structure (30) for directing said air gas mixture to the flame port (11 ) from the transition port (31) [col 4, line 47-56]. It is seen from figures 1 and 3 that the occluding structure forms a wall extending away from the venturi, and the distributor means has an air entry port (2). In view of Dane, the occluding structures would further direct the mixture to the center of the burner via the ports. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have occluding structures because the design was known in the art, yielding the predictable result of further directing the mixture to provide an evenly heated flame.

70. With respect to claim 46, Bechtold discloses a gas burner as claimed in claim 45, however does not disclose the cap.

71. With respect to claim 47, Bechtold discloses a gas burner as claimed in claim 46, wherein the distributor includes a multiplicity of flame ports [see FIG 4].

72. With respect to claim 48, Bechtold discloses a gas burner as claimed in claim 47, however does not disclose the flame ports as further claimed.

73. With respect to claim 49, Bechtold discloses a gas burner as claimed in claim 42, wherein each distribution chamber includes at least three venturi extensions which

define two peripheral channels and a transverse channel to deliver air gas mixture to flame ports [see FIG 4].

74. With respect to claim 50, Bechtold discloses a gas burner as claimed in claim 46, however does not disclose the cap as further claimed.

75. With respect to claim 51, Bechtold discloses a gas burner as claimed in claim 42, however does not disclose the vertical passages as further claimed.

76. With respect to claim 52, Bechtold discloses a gas burner as claimed in claim 46, however does not disclose the cap as further claimed with the venture extension, but does show the venture extensions formed in the distributor, satisfying the "and/or" phrase in the claim..

77. With regard to claims 46, 48 and 50-52, Bechtold discloses a gas burner, however Dane teaches a similar gas burner wherein said burner includes a cap (7), wherein it is seen the distributor means (9) includes a multiplicity of flame ports (11 ), wherein it is seen that the flame ports, according to figure 4 of the applicant, are formed in a wall of the distributor wherein the flame ports extend up to the cap, as can be similarly seen in figure 2 of Dane. With respect to claim 49, wherein the chamber (8) includes a venturi extension (6) that defines a peripheral channel that delivers an air gas mixture to the flame ports [see FIG 1, col 3, line 55-59]. With respect to claims 51 and 52, it is seen that the venturi has a vertical passage that opens to a horizontal venturi extension which extends away from the vertical passage (3), and is therefore seen to be formed in the distributor means. Although the venturi extensions are not formed in the cap, it is believed that this is a matter of design choice since gas will be delivered in

the same manner. In view of Dane, there is a cap as further defined in the claims. It would have been obvious to a person of ordinary skill in the art at the time of the invention to include a cap on top of a burner because the option to do so was known, yielding the predictable result of further directing the air gas mixture toward the center of the burner.

78. With respect to claim 76, Bechtold discloses a burner as claimed in claim 17, wherein each distribution chamber includes a venturi extension [see FIG 4], however does not disclose the cap. Dane teaches a similar device wherein there is a cap, wherein if used to modify Bechtold the venturis would extend into. In view of Dane, there is a cap as further defined in the claims. It would have been obvious to a person of ordinary skill in the art at the time of the invention to include a cap on top of a burner because the option to do so was known, yielding the predictable result of further directing the air gas mixture toward the center of the burner.

79. Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bechtold [‘483], in view of Huang [‘849], further in view of Halsey [6663025].

80. With respect to claim 32, Bechtold discloses a burner as claimed in claim 1, however does not disclose the mounting means as claimed.

81. With respect to claim 33, Bechtold discloses a burner as claimed in claim 32, however does not disclose the shape of the cavity.

82. With respect to claim 34, Bechtold discloses as burner as claim in claim 32, however does not disclose the manifold as further claimed.

83. With regard to claims 32-34, Bechtold discloses the burner as claimed, however Halsey et al teaches a similar device wherein the distributor is mounted on a manifold that has a gas inlet (412) [see FIG 4A], wherein the gas inlet communicates with a cavity (410) in the manifold wherein the injector (302) is seen to be apart of the cavity, and with respect to claims 33 and 34, the manifold is convex toward the centre, wherein it is seen that the outer periphery has a greater height than the inner, and any spills would be directed toward the centre. In view of Halsey et al, the distributor sits atop of the manifold wherein the manifold is convex. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have a manifold that is convex because the design was known to allow spills to be directed toward the center of the burner body, yielding the predictable result of having a collecting means for any spills so flame ports will not be obstructed.

84. Claims 81-83 and 85-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bechtold [483], further in view of Dane [954].

85. With respect to claim 81, Bechtold discloses the burner of claim 77, but does not include the cap.

86. With respect to claim 82, Bechtold discloses the burner wherein the distributor has the flame ports.

87. With respect to claim 83, Bechtold discloses the burner of claim 82, however does not further disclose the cap with the flame ports.

88. With respect to claim 85, Bechtold discloses the burner of claim 82, however does not further disclose the cap with the venturi extension.

89. With respect to claim 86, Bechtold discloses the burner of claim 82, however does not further disclose the cap.

90. With respect to claim 87, Bechtold discloses the burner of claim 86, however does not further disclose the cap.

91. With respect to claim 88, Bechtold discloses the burner of claim 86, however does not further disclose the cap.

92. With respect to claims 81-83 and 85-88, Bechtold discloses a burner with the use of the flame ports and venturi as further claimed. Dane teaches a similar device wherein there is a cap, when if used to modify Bechtold would provide the further relationship with the flame ports, wherein it is believed to be used as a means to further direct the air gas mixture. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide a cap because the option to do so was known in the art to provide a means to direct the air gas mixture.

### ***Conclusion***

93. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the



shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AVINASH SAVANI whose telephone number is (571)270-3762. The examiner can normally be reached on Monday- Friday, alternate Fridays off, 7:30-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Avinash Savani/  
Examiner, Art Unit 3749

/Steven B. McAllister/  
Supervisory Patent Examiner, Art Unit 3749

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/A. S./  
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